Appeal In The Matter Of Department Permits L-24572-24-C-N, L-24572-TF-D-N, L-24572-IW-E-N, L-24572-24-F-N and L 24572-TF-G-N // Approval for Oakfield Wind Project Expansion

- Licensee Exhibit N

  Maine GenLead Application, Section 7, Appendix 7-6 ("Mitigation and Compensation Report")

Appendix 7-6
Mitigation and Compensation Report

1.0 PROJECT OVERVIEW

This compensation plan is offered as wetland and habitat compensation for two amendments to the previously permitted Oakfield Wind Project. First, in this amendment application, Maine GenLead, LLC (Maine GenLead) is proposing to construct an electrical generation lead line and the associated corridor in the organized and unorganized towns of Chester, Woodville, Mattawamkeag, Molunkus Township, Macwahoc Plantation, North Yarmouth Academy Grant Township, Reed Plantation, Glenwood Plantation, T3R3 WELS, T4R3 WELS, Linneus, and Oakfield in Penobscot and Aroostook Counties, Maine. The project is expected to consist of approximately 58.5 miles of new 115-kilovolt transmission line and access roads running from Oakfield to Chester. It is designed to serve the electrical transmission needs of the amended Oakfield wind project. Approximately 35 miles of this new transmission line is co-located with existing transmission line corridor rights-of-way (ROWs).

Second, the summit portion of the Oakfield Wind Project is being amended by Evergreen Wind Power II, LLC (Evergreen II) to change the turbine types from General Electric (GE) 1.5-megawatt (MW) turbines to Vestas V-112 3.0-MW turbines; increase the total number of turbines from 34 to 50 and the installed capacity from 51 MW to 150 MW; relocate the substation and point of electrical interconnection with the electrical grid (the Maine GenLead tie line and corridor described previously), and add up to 5 permanent meteorological towers.

2.0 PROJECT IMPACTS

The landscape surrounding most of the project corridor and summit area has been managed for commercial forestry, in some areas heavily, for the last 50 or more years. The proposed transmission corridor is adjacent to an existing ROW for at least 60 percent of its length, and the summit project takes advantage of existing roads as much as is practical.

The wetlands along the transmission corridor are comprised of small, isolated emergent wetlands, as well as large forested wetlands, both previously disturbed by timber management activity and other naturally-occurring undisturbed features. The project crosses various state and federal waterways such as the Penobscot River, Wytipitlock Stream, and small unnamed tributaries. The majority of the wetland and stream resources are not extraordinary and are typical of the large expanses of wetlands found in north-central Maine. These resources do not support a great diversity of plant species or wildlife habitats.

The environment where this project is proposed is not an unspoiled, intact landscape. The proposed impacts associated with this project are minimal, especially considering the construction practices to reduce erosion, maintain stream and vernal pool buffers, and reduce fragmentation by co-location. None of the regulated Deer Wintering Area (DWA) habitat that would be impacted by the projects is currently functioning as a DWA, nor does it contain the canopy cover that conforms to this habitat.

The proposed corridor will impact a total of 48 vernal pools, primarily due to clearing more than 25 percent of an area 250 feet around the vernal pool depression. Six pools are naturally-created pools that meet significance criteria defined by the Maine Department of Environmental Protection (MDEP), and 12 pools either contain enough egg masses to meet the significance criteria or have other biodiversity to make them a valuable resource in the landscape regardless of their origin. The project design utilizes taller poles at Significant Vernal Pools in order to span the pools without needing to remove species capable of reaching canopy height. Maine GenLead is planning to maintain wooded buffers in this 250-foot habitat area around vernal pools by increasing the height of the poles on either side of the habitat area, cutting only those trees necessary to meet safety standards to avoid contact with the transmission line.

The Maine GenLead project will result in the following wetland and habitat impacts:

- 27.4 acres of temporary wetland, permanent wetland, and stream shore habitat impact, of which:
  - 2.1 acres are permanent wetland impact from fill associated with poles and transmission line access roads;
  - 20 acres are temporary fill in the form of mats for construction vehicles, in place for less than 18 months; and
  - 5.3 acres are upland forest clearing within 100 feet of streams.
- 133 acres of secondary wetland impacts (i.e., a result of clearing and permanent community conversion) in forested wetlands; and
- 98 acres of mapped wildlife habitat in the form of Inland Wading Bird and Waterfowl Habitat (IWWH), DWA habitat, vernal pool depressions, and habitat within 250 feet of a Significant Vernal Pool.

In addition to the impacts associated with the Maine GenLead amendment, the impacts related to the construction of the summit amendment constitute an additional 12.3 acres, comprised primarily of indirect impacts associated with the clearing of upland within 100 feet of streams:

- 0.84 acre of permanent wetland fill and temporary wetland fill;
  - 0.25 acre of permanent wetland fill; and
  - 0.59 acre of temporary wetland fill in the form of mats for construction vehicles, in place for less than 18 months.
- 4.01 acres of secondary wetland impacts (i.e., a result of clearing and permanent community conversion) in forested wetlands; and
- 7.97 acres of upland clearing within 100 feet of a stream.

The 169 acres of permanent, temporary, and indirect wetland impacts, and 98 acres of MDEP regulated habitat impacts, were calculated to require compensation[1] totaling 277 acres of upland and wetland preservation, restoration, and stream buffer and significant vernal pool buffer restoration projects. Stantec Consulting (Stantec) calculated the impact numbers for each category defined in the July 2010 U.S. Army Corps of Engineers guidance document[2] and applied Best Management Practices to reduce those numbers for a utility corridor.

Maine GenLead and Evergreen II (both affiliates of First Wind, LLC) are committed to instituting effective and appropriate erosion control measures during construction, especially surrounding the temporary construction roads, including geo-textile fabric silt fence and other materials to filter out fine sediments. All soil exposed during construction will be seeded and mulched using native species seed mixes. To avoid soil compaction from using heavy machinery, operators will grade the soil. Temporary fill, i.e., mats, will be used for a limited period of time that will not exceed 18 months. All buffers will be marked on the ground prior to beginning construction using a combination of flagging and visible signage such as a 100-foot stream buffer prohibiting the use of herbicide and any refueling or maintenance of equipment. During construction, there will be no refueling or equipment maintenance within 250 feet of a Significant Vernal Pool. Any in-stream work on delineated streams will take place between July 1 and October 15 to avoid impacting fish spawning activity.

3.0 COMPENSATION

To identify an appropriate compensation package for the impacts associated with these projects, the effort included calculating an in-lieu fee amount and evaluating traditional compensation options of restoration, enhancement, and preservation. A calculation of in-lieu fee approximated $9.4 million, an

[1] Corps of Engineers July 2010 Revision of the New England District Compensatory Mitigation Guidance and Central Maine Power Company Mitigation Guidance: Adjustments to standard ratios/amounts for temporary & indirect impacts activities.
[2] Ibid.

amount prohibitive to project construction, the majority of which is a result of indirect impacts associated with transmission line construction.

Maine GenLead and Evergreen II sought a compensation plan that is a) within proximity to the impact; and b) "in-kind" as defined as being representative of those impacts incurred with the ROW development/construction. The mitigation site search also focused on identifying high value resources having contiguity with other public or conservation lands. The threat of development also played a significant role in site selection. Rather than seek out several postage-size mitigation parcels, Maine GenLead selected parcels of sufficient size and quality that would maintain a functional ecosystem and provide opportunities for restoration. This search, for example, identified several smaller parcels scattered across the landscape, each of which contained some portion of the habitats and resources required for compensation. None of these parcels, however, were contiguous with the other wildlife or wetland habitats, or were adjacent to lands already protected. Additionally, the smaller parcels were in multiple ownerships, making it difficult to obtain title and thus establish mitigation of sufficient size and quality.

As a result of the site selection process, Maine GenLead identified two parcels meeting the primary criteria:

- a 979-acre parcel in Macwahoc Plantation, centrally located along the proposed transmission corridor in Aroostook County; and
- a 2,100-acre parcel approximately 8 miles from the proposed corridor in Drew's Plantation in Penobscot County.

A more detailed investigation of the parcels identified both as rich and complex compensation opportunities. Conversations with the resource agencies indicated receptiveness to protecting the parcel in Drew's Plantation and incorporating it into an existing Wildlife Management Area.

This proposed compensation area is directly adjacent on the eastern-most side to the existing Mattawamkeag River Wildlife Management Area (WMA) managed by the Maine Department of Inland Fisheries and Wildlife (MDIFW). The southeastern border is comprised of the railroad Eastern Maine Railway (subsidiary of J.D. Irving). The southwestern border is the forest land owned and managed for timber harvest by H.C. Haynes, and the northern border is the Aroostook County line with forest land in Reed Plantation.

The proposed compensation area contains 277 acres of rare and exemplary habitat along Meadow Brook. This habitat is an unpatterned fen ecosystem that receives upwelling groundwater that contains nutrients. This provides habitat for many of Maine's rare plants, and there are two known rare plant locations in the vicinity of this parcel. A more detailed survey would likely locate more occurrences.

The compensation parcel also contains 253 acres of Land Use Regulation Commission-regulated DWA that in the last 20 years (possibly as recently as 2009) has undergone cutting activity that is part of a forest management strategy. Additionally, the parcel contains 204 acres of forested wetland, portions of which are part of the DWA. These forested wetlands have been harvested.

The scrub-shrub and emergent wetlands within the parcel are prolific, occurring primarily along the U.S. Geological Survey (USGS)-mapped streams. The compensation area contains at least four potential vernal pools. These pools were identified based on National Wetlands Inventory (NWI) wetland maps and rudimentary aerial image interpretation. Based on experience in this type of ecosystem, a full parcel survey likely will reveal more vernal pools.

This compensation area is at risk of development due to its potential for future timber harvest; the DWA habitat is particularly vulnerable. An additional parcel that MDIFW is seeking to acquire on the south side of the railroad tracks was part of a plan to subdivide and sell 10 acres to another landowner nearby. Because of the seasonal logging roads and landings, it is a realistic possibility that a similar subdivision plan is underway for this parcel as well.

This proposed 2,100 acre compensation area in Drew's Plantation provides the following compensation values:

- Adjacent to the MDIFW Mattawamkeag River WMA;
- 459 acres of wetland preservation comprised of:
    - approximately 216 acres of scrub-shrub wetland,
    - approximately 39 acres of emergent or open water wetland, and
    - approximately 204 acres of forested wetland.
- 425 acres of mapped IWWH wetland and upland buffer habitat;
- 253 acres of regulated DWA habitat;
- at least 4 potential vernal pools;
- over 15,000 linear feet of mapped USGS stream habitat in the critical habitat area for the GOM Atlantic Salmon;
- Brook trout (*Salvenius fontinalis*) habitat in the mapped perennial streams; and
- 277 acres of Rare and Exemplary habitat along Meadow Brook and two other unnamed USGS streams, an Unpatterned Fen Ecosystem.

Table 1 details the resources provided in this compensation package that meet the requirements established in the impact calculations.

3.1 COMPENSATION AREA VALUES

3.1.1 RESTORATION: WETLAND AND BUFFERS

The summit portion of the proposed project involves construction in areas with historic access roads for homesteads, camps, recreational trails, and logging activity. In some areas, these roads were re-routed to avoid impacting high-value habitats, streams, and the associated buffers. In these areas, there is opportunity to restore that portion of the habitat or wetland to its original, undisturbed condition. This process will involve removing the road bed, using the gravel material elsewhere in the project, and grading the area to match to the adjacent topography; re-vegetating using a native seed mix to avoid soil erosion; and otherwise allowing trees and shrubs to migrate and re-integrate naturally. This opportunity exists for approximately 10,000 square feet (sq. ft.) of Significant Vernal Pool buffer restoration, approximately 20,000 sq. ft. of upland stream buffer restoration, and approximately 1,800 sq. ft. of wetland restoration.

3.1.2 PRESERVATION: WETLANDS

The wetlands that would be protected in the compensation area total 459 acres, including approximately 216 acres of scrub-shrub wetland, 39 acres of open water and emergent wetland, and approximately 204 acres of forested wetland. Many of the forested wetlands in this area have been harvested in the last 20 years (perhaps as recently as 2009); existing roads make this parcel at risk for subdivision and future harvest. Scrub-shrub wetlands are the dominant wetland type in this compensation parcel according to National Wetlands Inventory maps. Scrub-shrub wetlands are valuable habitat for a variety of birds, mammals, reptiles, and amphibians, different than what may be found in a forested wetland. The emergent wetlands within the compensation area are primarily associated with the USGS streams and IWWH and are discussed in the following section. Some small pockets of emergent wetland occur elsewhere, typically associated with another wetland type as a percentage of a forested or scrub-shrub wetland complex.

This compensation area provides a valuable and complex mosaic of wetland and associated upland habitats across the 2,100 acres.

3.1.3 PRESERVATION: WILDLIFE HABITAT

Stantec's 2009 and 2010 field surveys indicate that the mapped and regulated DWAs that will be impacted along the proposed Maine GenLead transmission line corridor are not presently functioning as DWAs. *There are no DWA impacts in the summit area. Past and present timber management activity* removes the suitable softwood shelter stands and fragments the travel corridors. The two regulated DWAs in the compensation area have been harvested. Based on aerial photo interpretation, they do not *contain conforming cover sufficient to support a wintering deer herd. Preserving these two mapped* resources is a major focus of this compensation area, as is regenerating the forest canopy and prohibiting future harvest activity that is not specifically part of a DWA forest management plan.

In addition, the compensation area contains approximately three miles of perennial stream habitat, and two of the three mapped streams are direct tributaries of the Mattawamkeag River. The Mattawamkeag River is part of the critical habitat area for the GOM Atlantic Salmon and is also an existing brook trout fishery. According to the MDIFW Strategic Management Plan for brook trout,[3] the species survives best in waters below 68 degrees Fahrenheit. Protecting the canopy over tributary streams prevents the water from warming before it flows into larger streams. This practice retains the cold water river habitat required by brook trout. Brook trout are opportunistic sight feeders and are sensitive to even moderate amounts of turbidity in the water. With pressure across the state for development, it is important to preserve the wildlife habitat that is the framework for Maine outdoor sporting tourism.

Finally, this parcel includes 425 acres of mapped IWWH, of which 39 acres are open water and emergent wetland habitat. This habitat is associated with the convergence of Meadow Brook and another unnamed USGS stream and the wetland floodplain of an unnamed USGS stream before emptying into the *Mattawamkeag River. These IWWHs are mapped as moderate value.*

3.1.4 ADJACENT USES

This compensation area is adjacent to the 4,043-acre MDIFW Mattawamkeag River WMA. This WMA is part of the Mattawamkeag River Bogs and Fens Focus Area mapped by Beginning With Habitat. Surveys by the Maine Natural Areas Program indicate that this system is part of the largest unpatterned fen ecosystem currently mapped in the state, it contains two rare plant populations, and it is listed as an exemplary habitat. This WMA is managed for a variety of recreational uses, including fishing, boating, canoeing, and wildlife viewing. The MDIFW, in conjunction with The Nature Conservancy and the Maine Department of Transportation, is in the process of acquiring a 1,200-acre parcel on the south side of the railroad corridor, which will increase the WMA to 6,400 acres. *It is anticipated that the compensation area* would be deeded to the State of Maine to further expand the protected tract of land important to wildlife corridors and to protect the piece from potential development and timber harvest activity in this region.

4.0 SUMMARY

This parcel represents approximately seven times the calculated compensation acreage required for the impacts of the Maine GenLead and Evergreen II projects. The combination of diverse attributes found on this parcel—its location, continuity, resources, habitat, and threat of development—make this compensation proposal a prize for habitat and wetland restoration, land preservation, and public protection.

[3] Bonney, F.R. 2009 "Brook Trout Management Plan" Department of Inland Fisheries and Wildlife, Divisions of Fisheries and Planning. Accessed on February 2, 2011 at:
[http://www.maine.gov/ifw/fishing/species/management_plans]

Table 1. Impact Extents, Ratios and Reductions Used to Determine Compensation Required and Provided for Evergreen and Maine GenLead Projects

Impacts			USACE Compensation Required (using standard USACE ratios and adjustment)[1] (in acres)	MDEP Compensation Required (using standard MDEP ratios and adjustment)[1] (in acres)	Standard Ratios and Reductions Used	Compensation Provided**	
Activity		Impact Extent (in acres)					
Temporary (< 18 mo) Wetland fill from Construction Access Roads	Temporary (< 18 mo) fill in non-forested wetlands from construction access roads	3.27	2.45	not required	15:1 to 5%	Approximately 216 acres of scrub-shrub and unconsolidated bottom wetland	
	Temporary (<18 mos.) fill in forested wetlands from construction access roads	17.32	38.97	not required	15:1 to 15%		
	Total Temporary Fill Impacts	**20.59**	**41.42**	**0.00**			
Permanent Cover Type Conversion of Forested Wetlands to Scrub/Shrub		**137.4**	**61.83**	**not required**	**3:1 to 15%**	204 acres of PFO preserved	1,800 square feet of wetland restoration
Permanent Cover Type Conversion in High and Moderate Value Inland Wading Bird and Waterfowl Habitat (61% of impacts are to WWH rated moderate value)		**39.03**	**not required**	**64.40**	**5:1 to 33%**	425 acres of IWWH habitat	
Permanent Cover Type Conversion in High and Moderate Value Deer Wintering Area Habitat (DWAs impacted are rated indeterminate value)		**42.89**	**not required**	**70.77**	**5:1 to 33%**	253 acres of DWA habitat protected, raised pole height in Macwahoc Co-op DWA to reduce clearing impacts	
Permanent Cover Type Conversion in Vernal Pool Habitats (250 feet)[3]		**0.93**	**0.56**	**0.09**	**3:1 to 20%; 1:1 to 10%**	957 acres of upland habitat under silvicultural prescription. Approximately 10,000 square feet of VP habitat buffer restoration	4 potential vernal pools identified based on NWI map interpretation.
Permanent Wetland Fill	Permanent Fill associated with Pole Locations	0.12	1.95	1.04	**15:1 at 100%; 8:1 at 100%**	277 acres of rare and exemplary habitat with 39 acres of emergent wetland preservation	
	Permanent Fill associated with Transmission Line Access Roads	1.59	27.89	14.80			
	Permanent Fill associated with Summit Turbine Pads and Access Roads	0.25	3.75	2.00			
	Total Permanent Fill Impacts	**1.96**	**33.59**	**17.84**			
Stream Impacts (Clearing upland within 100')		**13.31**	**3.99**	**0.67**	**3:1 to 10%; 1:1 to 5%**	3 miles of wetland stream shore habitat draining into the Mattawamkeag River.	Restoration of 0.5 acres of upland stream buffer

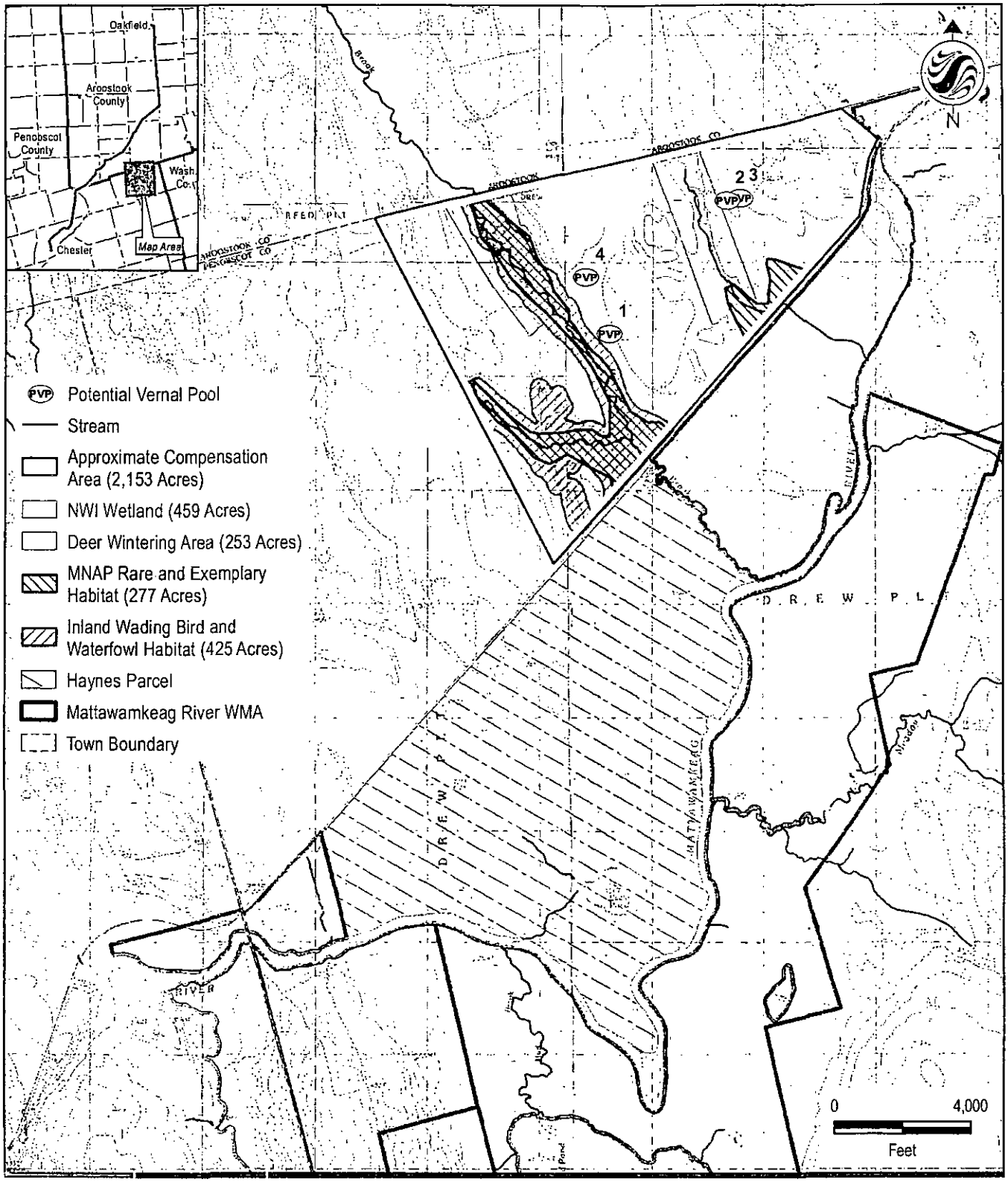
**Resources cannot be summed to find the total acres provided as compensation, there is significant resource overlap.

[1]*USACE Standard Ratios: 1:1 for stream restoration, 15:1 for wetland/upland preservation, 3:1 for restoration/enhancement - also utilizing the document CMP Mitigation Guidance: Adjustments to standard ratios/amounts for temporary & indirect impacts activities*

MDEP Standard Ratios: 1:1 for stream restoration, 8:1 for wetland/upland preservation, 1:1 for restoration/enhancement - also utilizing the document *CMP Mitigation Guidance: Adjustments to standard ratios/amounts for temporary & indirect impacts activities*

[3]Includes MDEP Significant Vernal Pools and Man-Made Vernal Pools under USACE jurisdiction which meet the MDEP Significance criteria

Figure 1
Transmission Line Compensation Area



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Client/Project
Oakfield 115kv Transmission Line
Oakfield, Maine

Figure No.
1

Title
Transmission Line Compensation Area
May 2011